

REMARKS

I. Introduction

Claims 16 and 19-25 are pending in the present application after cancellation of claims 17 and 18. Claim 16 has been amended to incorporate the features of now-canceled claim 17. Claim 24 has been amended to more fully claim the present invention. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

II. Rejection of Claims 16, 17, 19, and 21-25 Under 35 U.S.C. § 103(a)

Claims 16, 19 and 21-25 were rejected under 35 U.S.C. § 103(a) as unpatentable over Pontoppidan (U.S. Patent No. 6,267,307) in view of Rhoades (U.S. Patent No. 4,995,949). In addition, claim 17 was rejected under 35 U.S.C. § 103(a) as unpatentable over Pontoppidan in view of Rhoades as applied to claim 16, and further in view of Fedorovich (Soviet Union Published Patent Application No. 775364B). Since Applicants have incorporated the features of now-canceled claim 17 into claim 16, Applicants will address the combination of Pontoppidan, Rhoades and Fedorovich as applied against claims 16, 19 and 21-25, and Applicants respectfully submit that these claims are patentable over the combination of Pontoppidan, Rhoades and Fedorovich for the following reasons.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Amended claim 16 recites a “fuel injector for use in projecting directly into a combustion chamber of an internal combustion engine, the fuel injector including . . . a downstream valve end including a component and a fuel outlet, wherein the fuel outlet includes at least one discharge orifice of the component, . . . the component includes a coating around the at least one discharge orifice, including at least in an immediate exterior of an outlet area of the at least one discharge orifice, and the coating includes a layer containing

fluorosilicate, and the layer containing fluorosilicate is applied by one of spraying and dipping.”

In support of the rejection of claim 16, the Examiner contends that “[i]t would have been obvious to . . . have modified the device of Pontoppidan by providing a coating comprising PTFE around the at least one discharge orifice as taught by Rhoades **in order to attain precise flow resistance.**” However, in support of the rejection of claim 17 (the features of which claim are now included in amended claim 16), the Examiner contends that “[i]t would have been obvious to . . . have modified the device of Pontoppidan and Rhoades by providing a coating comprising fluorosilicate as taught by Fedorovich et al. **in order to provide heat resistance.**” Applicants note that the Examiner’s stated rationale for initially combining the teachings of Pontoppidan and Rhoades completely contradicts the Examiner’s rationale for further combining the teachings of Fedorovich with the modified combination of Pontoppidan and Rhoades: in the first place, Rhoades is applied for teaching “a coating comprising PTFE” in order to attain precise flow resistance, yet the Examiner subsequently contends that Fedorovich should be applied to the modified combination of Pontoppidan and Rhoades because Fedorovich teaches “a coating comprising fluorosilicate” in order to provide heat resistance. Furthermore, Applicants note that the Examiner’s rationale for applying Fedorovich is factually incorrect, since Fedorovich clearly indicates that fluorosilicate “assists in coagulating the [sodium] silicate, and promotes drying,” while “zinc oxide raises the temperature resistance by forming a refractory cement with the sodium silicate.” (Fedorovich, English abstract). For at least these reasons, Applicants submit that one of ordinary skill in the art would not be motivated to make the combination asserted by the Examiner.

Independent of the above, Applicants note that in order for a claim to be rejected under 35 U.S.C. § 103(a), not only must the cited references teach or suggest each element of the claim, but the prior art must also *suggest the desirability* of combining the elements in the manner contemplated by the claim. M.P.E.P. § 2143.01 (citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990)). The mere fact that references *can* be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). Applicants respectfully submit that the teachings of Rhoades have very little relevance (if at all) to the presently claimed subject matter. Rhoades describes a method for electroplating the *internal shapes* of an orifice with a precisely controlled layer of material for purposes of controlling flow resistance. The problem of coating the exterior of the orifice is completely irrelevant as regards the object of the invention of Rhoades et al., since the exterior shape of an orifice has only a slight effect on the fluid flow rate. In fact, Rhoades only specifically mentions the use of a PTFE coating on the *interior surface of the*

orifice to improve orifice lubrication, which is directly related to the flow rate. Accordingly, Applicants submit that there is no motivation for combining the teachings of Rhoades with Pontoppidan and/or Fedorovich in an attempt to arrive at the presently claimed subject matter.

Independent of the above, Applicants respectfully submits that the Office Action reflects a subjective “obvious to try” standard, and therefore does not provide the proper evidence needed to support an obviousness rejection. In rejecting a claim under 35 U.S.C. § 103(a), Applicants’ invention “must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time.” See Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1138, 227 U.S.P.Q. 543, 547 (Fed. Cir. 1985) (emphasis added). The Federal Circuit has clearly indicated that even if a claim concerns a “technologically simple concept” -- which is not the case here --, there still must be some finding as to the “specific understanding or principle within the knowledge of a skilled artisan” that would motivate a person having no knowledge of the claimed subject matter to “make the combination in the manner claimed.” In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000). Applicants note that Fedorovich merely deals with coating the combustion chamber of an internal combustion engine, and there is simply no suggestion in Fedorovich regarding anything to do with a fuel outlet of a fuel injector valve, let alone anything to do with a coating in an immediate exterior of an outlet area of a discharge orifice. Accordingly, it is simply unreasonable to suggest that one of ordinary skill in the art would be motivated to selectively pick and choose the specific teaching regarding fluorosilicates from Fedorovich and selectively apply the teaching to the teachings of Pontoppidan and/or Rhoades.

For the foregoing reasons, it is respectfully submitted that the combination of Pontoppidan, Rhoades and Fedorovich does not disclose, or even suggest, all of the features of the claim 16. Accordingly, claim 16 and its dependent claims 19 and 21-25 are allowable over the combination of Pontoppidan and Rhoades.

III. Rejection of Claim 18 Under 35 U.S.C. § 103(a)

Claim 18 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Pontoppidan in view of Rhoades, and in further view of Otomo (U.S. Patent No. 4,620,995). Applicants respectfully submit that this rejection is moot in view of cancellation of claim 18.

IV. Rejection of Claim 20 Under 35 U.S.C. § 103(a)

Claim 20 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Pontoppidan in view of Rhoades, and in further view of Komaroff (U.S. Patent No. 4,397,283). Applicants respectfully submit that claim 18 is patentable over the combination of Pontoppidan, Rhoades and Komaroff for the following reasons.


Claim 20 depends on claim 16. In addition, Komaroff merely relates to an ignition onset sensor for internal combustion engines, and Komaroff does not cure the deficiency of the combination of Pontoppidan and Rhoades as applied against parent claim 16. Accordingly, it is respectfully submitted that dependent claim 20 is patentable over the combination of Pontoppidan, Rhoades and Komaroff.

VI. Conclusion

It is therefore respectfully submitted that all of the presently pending claims 16 and 19-25 are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

KENYON & KENYON

 (A. No. 36,197)

Dated: October 18, 2005

By: JONG LEE for Gerard Messina
Gerard A. Messina
Reg. No. 35,952

One Broadway
New York, New York 10004
(212) 425-7200

CUSTOMER NO. 26646